

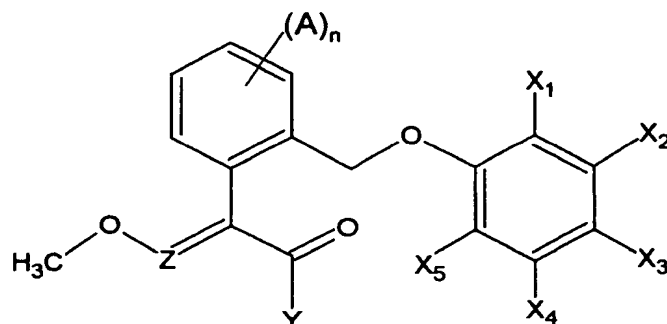
Retyped amended claim set

10/510383

DT04 Rec'd PCT/PTO 05 OCT 2004

CLAIMS

1. Compounds having general formula (I)



(I)

5 wherein:

- X₁ represents a hydrogen atom;
- X₂ represents a halogen atom or an R group;
- X₃ represents an R group when X₂ = halogen, or represents a halogen atom when X₂ = R;
- 10 - X₄ represents a halogen atom when X₃ = R, or represents a hydrogen atom when X₂ = R;
- X₅ represents a hydrogen atom when X₃ = R, or represents a halogen atom when X₂ = R;
- R represents a C₁-C₁₂ alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups, C₁-C₆ alkoxy groups optionally halogenated, C₂-C₁₀ alkoxyalkoxy groups optionally halogenated, C₃-C₁₂ trialkyl silyl groups; a C₂-C₁₂ alkenyloxy or alkenylthio group optionally substituted by halogen atoms; a C₃-C₁₂ alkynyloxy or
- 20 alkynylthio group; a linear or branched C₃-C₁₂ alkoxyimi-

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noalkylidenoxy or alkoxyiminoalkylidenthio group; a C₃-C₈ cycloalkoxy group optionally substituted by halogen atoms, C₁-C₆ alkyl or haloalkyl groups; a C₄-C₁₂ cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C₁-C₆ alkyl or haloalkyl groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C₁-C₆)alkoxy, aryl-(C₁-C₆)alkylthio group optionally substituted by halogen atoms, C₁-C₆ alkyl groups optionally halogenated, C₁-C₆ alkoxy groups optionally halogenated, nitro groups, cyano groups;

- A represents a halogen atom or a C₁-C₄ alkyl, haloalkyl, alkoxy, haloalkoxy group, groups A being the same or different when n is greater than or equal to 2;
- Y represents an OCH₃ group or an NHCH₃ group;
- Z represents a CH group or a nitrogen atom N when Y = OCH₃, a nitrogen atom N when Y = NHCH₃;
- n is an integer ranging from 0 to 4.

2. The compounds according to claim 1, characterized in that they are an isomeric mixture in any proportion, or the isomer E or the isomer Z of the compounds having formula (I).

3. The compounds according to claim 1, characterized in that they are the isomer E of the compounds having formula (I).

4. The compounds according to claim 1, characterized in

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that X_3 represents an R group according to the above mentioned meanings, X_2 and X_4 represent a halogen atom, X_1 and X_5 represent a hydrogen atom and n is equal to 0.

5. The compounds according to claim 1, characterized in
5 that they are selected from:

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-3-methoxyacrylate;
- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-2-methoxyiminoacetate;
- 10 - (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy-methyl]phenyl]-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy)methyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-
15 3,5-dichlorophenoxy)methyl]phenyl}-2-methoxyiminoacetate;
- (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy)methyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-
20 enyloxy)phenoxy)methyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxy)methyl]phenyl}-2-methoxyiminoacetate;
- (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxy)methyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- 25 - methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-

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trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

5 - methyl (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-2-methoxyiminoacetate;

- (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;

10 - methyl (E)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxyethyl]phenyl]-3-methoxyacrylate;

- methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

- methyl (E)-2-{2-[3,5-dichloro-4-(3-methylbutoxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

15 - methyl (E)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxyethyl]phenyl]-3-methoxyacrylate;

- methyl (E)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate;

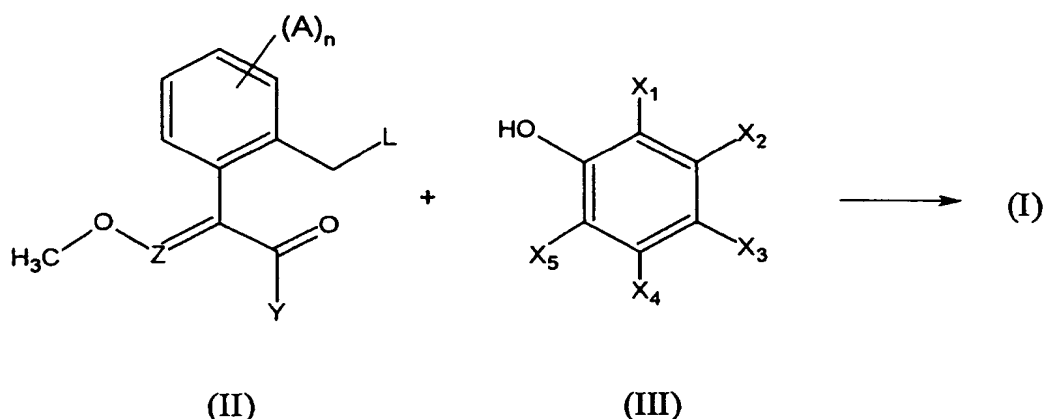
20 - methyl (E)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate.

6. The process for the preparation of the compounds having general formula (I), according to any of the claims 1-5, characterized in that it includes a condensation reaction of a compound having general formula (II) with a phenol having general formula (III), according to

25

the reaction scheme 1:

Scheme 1



wherein , X_1 , X_2 , X_3 , X_4 , X_5 , A , Y , Z and n have the meanings defined above, L represents a leaving group such as a chlorine atom, a bromine atom or a $R_LSO_3^-$ group wherein R_L represents a C_1 - C_6 alkyl or haloalkyl, or a phenyl optionally substituted.

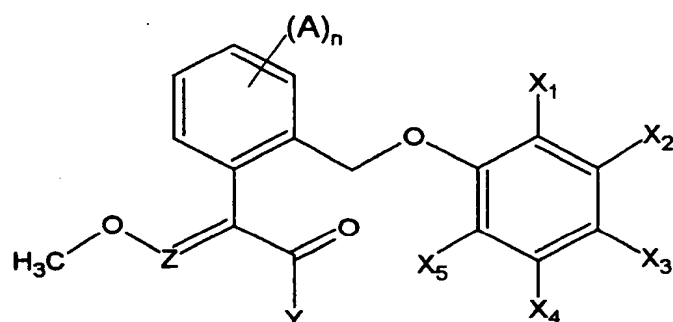
7. The process according to claim 6, characterized in that the reaction is carried out in an inert organic solvent, at a temperature ranging from 0°C and the boiling temperature of the reaction mixture, possibly in the presence of an inorganic or organic base.

8. The process according to claim 7, characterized in that the solvent is selected from alcohols, ethers, esters, ketones, chlorinated hydrocarbons, aromatic hydrocarbons, aliphatic hydrocarbons, aprotic dipolar solvents.

9. The process according to claim 7, characterized in that the inorganic base is selected from hydrides, hydroxides, carbonates of alkaline or alkaline-earth metals.

5 10. The process according to claim 7, characterized in that the organic base is selected from pyridine, dimethylaminopyridine, aliphatic amines, cyclic amines, alcoholates of alkaline metals.

11. Use of the compounds having general formula (I)



10

(I)

wherein:

- X_1 represents a hydrogen atom;
- X_2 represents a halogen atom or an R group;
- 15 - X_3 represents an R group when $X_2 = \text{halogen}$, or represents a halogen atom when $X_2 = R$;
- X_4 represents a halogen atom when $X_3 = R$, or represents a hydrogen atom when $X_2 = R$;
- X_5 represents a hydrogen atom when $X_3 = R$, or represents
- 20 - X_5 represents a halogen atom when $X_2 = R$;

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- R represents a C₁-C₁₂ alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups, C₁-C₆ alkoxy groups optionally halogenated, C₂-C₁₀ alkoxyalkoxy groups optionally halogenated, C₃-C₁₂ trialkyl silyl groups; a C₂-C₁₂ alkenyloxy or alkenylthio group optionally substituted by halogen atoms; a C₃-C₁₂ alkynyloxy or alkynylthio group; a linear or branched C₃-C₁₂ alkoxyiminoalkylidenoxy or alkoxyiminoalkylidenthio group; a C₃-C₈ cycloalkoxy group optionally substituted by halogen atoms, C₁-C₆ alkyl or haloalkyl groups; a C₄-C₁₂ cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C₁-C₆ alkyl or haloalkyl groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C₁-C₆)alkoxy, aryl-(C₁-C₆)alkylthio group optionally substituted by halogen atoms, C₁-C₆ alkyl groups optionally halogenated, C₁-C₆ alkoxy groups optionally halogenated, nitro groups, cyano groups;
- A represents a halogen atom or a C₁-C₄ alkyl, haloalkyl, alkoxy, haloalkoxy group, groups A being the same or different when n is greater than or equal to 2;
- Y represents an OCH₃ group or an NHCH₃ group;
- Z represents a CH group or a nitrogen atom N when Y = OCH₃, a nitrogen atom N when Y = NHCH₃;
- n is an integer ranging from 0 to 4;
- as acaricides and/or insecticides and/or fungicides.

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12. The use according to claim 11 of the isomers E of the compounds having formula (I).

13. The use according to claim 11, wherein X₃ represents an R group according to the above meanings, X₂ and X₄ represent a halogen atom, X₁ and X₅ represent a hydrogen atom and n is equal to 0.

14. The use according to claim 11, wherein the compounds of formula (I) are selected from:

- methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-3-methoxyacrylate;
- methyl (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-2-methoxyiminoacetate;
- (E)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxy)methyl]phenyl]-N-methyl-2-methoxyiminoacetamide;
- 15 - methyl (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy)methyl]phenyl}-3-methoxyacrylate;
- methyl (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy)methyl]phenyl}-2-methoxyiminoacetate;
- (E)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxy)methyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- 20 chlorophenoxy)methyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxy)methyl]phenyl}-3-methoxyacrylate;
- methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxy)methyl]phenyl}-2-methoxyiminoacetate;
- 25 enyloxy)phenoxy)methyl]phenyl}-2-methoxyiminoacetate;

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- (E)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-
phenoxyethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
 - methyl (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-
trifluorobut-2-enyloxy)phenoxyethyl]phenyl}-3-methoxy-
5 acrylate;
 - methyl (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-tri-
fluorobut-2-enyloxy)phenoxyethyl]phenyl}-2-methoxyimi-
noacetate;
 - (E)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-tri-fluorobut-
10 2-enyloxy)phenoxyethyl]phenyl}-N-methyl-2-methoxyimino-
acetamide;
 - methyl (E)-2-{2-(4-cyclobutylmethoxy-3,5-dichloro-
phenoxyethyl]phenyl}-3-methoxyacrylate;
 - methyl (E)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy)
15 phenoxyethyl]phenyl}-3-methoxyacrylate;
 - methyl (E)-2-{2-[3,5-dichloro-4-(3-methylbutoxy) phe-
noxyethyl]phenyl}-3-methoxyacrylate;
 - methyl (E)-2-{2-(4-cyclohexylmethoxy-3,5-dichloro-
phenoxyethyl]phenyl}-3-methoxyacrylate;
 - 20 - methyl (E)-2-{2-[3,5-dichloro-4-(2,4-dichloro-
benzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate;
 - methyl (E)-2-{2-[3,5-dichloro-4-(4-chloro-
benzyloxy)phenoxyethyl]phenyl}-3-methoxyacrylate.
15. The use according to any of the claims 11-14 for the
25 control of adults, larvae and eggs of mites and insects

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which are harmful in the agrarian, civil and zoo-technical field.

16. The use according to claim 15, wherein the harmful mites and/or insects are tetranychidae (*Tetranychus ur-*
5 *ticae*, *Tetranychus telarius*, *Tetranychus cinnabarinus*,
Eotetranychus carpini, *Panonychus ulmi*, *Panonychus ci-*
tri), eriophyidae (*Phytoptus avellanae*, *Eriophyes vitis*,
Eriophyes piri) tarsonemidae (*Steneotarsonemus pallidus*),
hemiptera (*Macrosiphum euphorbiae*, *Aphis fabae*, *Myzus*
10 *persicae*), lepidoptera (*Spodoptera* spp., *Heliothis* spp.,
Chilo spp., *Carpocapsa pomonella*), coleoptera (*Leptino-*
tarsa decemlineata, *Phaedon cochleariae*), diptera (*Aedes*
spp., *Culex* spp., *Musca* spp.).

17. The use according to any of the claims 11-14 for the
15 control of phytopathogenous fungi such as: *Helminthosporium* spp., *Erysiphe* spp., *Puccinia* spp., *Plasmopara viti-*
cola, *Pythium* spp., *Phytophthora* spp., *Rhynchosporium*
spp., *Septoria* spp., *Sphaerotheca fuliginea*, *Podosphaera*
leucotricha, *Pyricularia oryzae*, *Uncinula necator*, *Ventu-*
20 *ria* spp., *Botrytis cinerea*, *Fusarium* spp., *Alternaria*
spp., *Cercospora* spp.

18. The use according to any of the claims 11-14 for the
control of mites, insects and fungi which are harmful in
crops of agrarian and horticultural interest, on domestic
25 and breeding animals, in environments frequented by human

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beings.

19. A method for controlling mites and/or insects and/or
phytopathogenous fungi in crops of agrarian and horticultural
interest, and/or on domestic and breeding animals,
5 and/or in environments frequented by human beings, by the
application of the compounds having general formula (I)
according to one of the claims 1-5.

20. The method according to claim 19, characterized in
that the quantity of compound to be applied varies from
10 10 g to 5 kg per hectare.

21. Acaricidal and/or insecticidal and/or fungicidal
compositions containing as active principle one or more
compounds having general formula (I) according to one of
the claims 1-5.

15 22. The compositions according to claim 21, comprising
other active principles compatible with the compounds
having general formula (I), such as other acar-
icides/insecticides, fungicides, phyto-regulators, anti-
biotics, herbicides, fertilizers.

20 23. The compositions according to claim 21, character-
ized in that the concentration of active principle ranges
from 1 to 90%, preferably from 5 to 50%.